Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	("5883082").PN.	USPAT	OR	OFF	2005/03/28 14:04
L2	1	("5942607").PN.	USPAT	OR	OFF	2005/03/28 14:04
L3	20038	b7 or b7-1 or b7-2	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/28 14:08
L4	40	L3 near2 antisense	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/28 14:08
S1	1	("6319906").PN.	USPAT	OR	OFF	2005/03/25 09:45
S2	160	B7 adj protein	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2004/09/09 13:40
S3	64	S2 and hybridize	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2004/09/09 14:29
S4	76	S2 and antisense	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2004/09/09 14:31
S5	10	S2 with antisense	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2004/09/09 14:31
S6	1	("6319906").PN.	USPAT	OR	OFF	2005/03/25 09:29
S7	1	("6077833").PN.	USPAT	OR	OFF	2005/03/25 09:45
S8	0	(09/980,953).CCLS.	USPAT	OR	OFF	2005/03/25 12:01
S9	0	09/980,953	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/25 12:01
S10	37	timothy near2 vickers.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/25 14:46
S11	131	frank near bennett.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/25 14:39
S12	10	S11 and antisense	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/25 14:29
S13	0	S11 and b7	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/25 14:29

S14	420	("c." frank) near2 bennett.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/25 14:39
S15	254	(c adj frank) near2 bennett.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/25 14:43
S16	10	S14 and b7	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/25 14:42
S17	265	S14 and antisense	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/25 14:42
S18	10	S15 and b7	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/25 14:43
S19	21	james near2 karras.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/25 14:43
S20	4	S19 and b7	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/25 14:45
S21	6	S10 and b7	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/25 14:45
S22	20031	b7 or b7-1 or b7-2	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/25 14:47
S23	866	S22 with human	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/25 14:47
S24	50	S23 same antisense	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/03/28 14:07

FILE 'EMBASE, MEDLINE, BIOSIS, CAPLUS' ENTERED AT 14:57:09 ON 28 MAR 2005
L1 27574 S B7 OR B7-1 OR B7-2
L2 83 S L1 (S) (ANTISENSE OR ANTI SENSE)
L3 52 DUP REM L2 (31 DUPLICATES REMOVED)
L4 10 S L1 (S) RIBOZYME
L5 8 DUP REM L4 (2 DUPLICATES REMOVED)

AU Mazanet M.M.; Hughes C.C.W.
SO Journal of Immunology, (1 Oct 2002) 169/7 (3581-3588).
Refs: 41
ISSN: 0022-1767 CODEN: JOIMA3
TI B7-H1 is expressed by human endothelial cells and suppresses T cell cytokine synthesis.
AB Human endothelial cells (ECs) provide costimulatory signals sufficient to activate resting memory T cells to produce IL-2 and IFN-.gamma., at least in part through CD58-CD2 interactions. Recently, the B7-like molecule, B7-H1 (PD-L1), was described and shown to regulate T cell activation; however, there are conflicting reports on whether it stimulates or inhibits T cell cytokine synthesis. B7-H1 is not expressed constitutively by ECs; however, it is rapidly induced by IFN-.gamma., and synergistically by IFN-.gamma. and TNF. In inflamed skin, B7-H1 is expressed by a subset of microvessels, and by keratinocytes, but is barely detectable in normal skin. Blocking the interaction of EC-expressed B7-H1 with its T cell ligand, programmed death-1 (PD-1), using a PD-1-Fc fusion protein, or by blocking B7-H1 expression with morpholino antisense oligonucleotides, augments expression of IL-2 and IFN-.gamma., implicating B7-H1 as a negative regulator of cytokine synthesis. However, signaling through PD-1 does not affect induction of the activation markers CD25 or CD69 on T cells, suggesting that its effects are specific to cytokine synthesis. The suppressive effects of B7-H1 on cytokine expression are proportional to the strength of the primary stimulus, allowing for B7-H1 to determine the level of T cell activation in response to ECs. Our results demonstrate that B7-H1 negatively regulates cytokine synthesis in T cells activated by ECs.

AU Crosby, J. R. [Reprint Author]; Witchell, D. W. [Reprint Author]; Arberg, C. C. [Reprint Author]; Shen, L. [Reprint Author]; McKay, K. [Reprint Author]; Monia, B. P. [Reprint Author]; Karras, J. G. [Reprint Author]; Gregory, S. A. [Reprint Author]; Tung, D. [Reprint Author]
SO Inflammation Research, (July 2003) Vol. 52, No. Supplement 2, pp. S 85. print.
Meeting Info.: 6th World Congress on Inflammation. Vancouver, British Columbia, Canada. August 02-06, 2003. International Association of Inflammation Societies.
ISSN: 1023-3830.
TI Local delivery of a B7.2-specific antisense oligonucleotide inhibits airway inflammation and hyperresponsiveness in mice.

IN Bennett, C. Frank; Vickers, Timothy A.; Karras, James G.
SO U.S. Pat. Appl. Publ., 88 pp., Cont.-in-part of Appl. No. PCTUS/00/14471.
CODEN: USXXCO
TI Oligonucleotide compositions and methods for the modulation of the expression of B7 protein
AB Compns. and methods for the treatment of inflammatory skin disorders, such as psoriasis, with oligonucleotides which specifically hybridize with nucleic acids encoding B7 proteins.

IN Bennett, C. Frank; Vickers, Timothy A.; Karras, James G.
SO U.S. Pat. Appl. Publ., 182 pp., Cont.-in-part of U.S. Ser. No. 851,871.
CODEN: USXXCO
TI Antisense oligonucleotide compositions and methods for the modulation of expression of B7 protein and its use in treatment of respiratory diseases
AB Compns. and methods for the treatment of asthma with oligonucleotides which specifically hybridize with nucleic acids encoding B7 proteins. This invention relates to antisense oligonucleotide interactions with

certain messenger ribonucleic acids or DNAs involved in the synthesis of proteins that modulate T cell activation. Antisense oligonucleotides designed to hybridize to nucleic acids encoding B7 proteins are provided.

IN Bennett, Frank C.; Vickers, Timothy A.; Karras, James G.; Freier, Susan M.

SO PCT Int. Appl., 387 pp.
CODEN: PIXXD2

TI Antisense oligonucleotides for modulation of expression of human and murine B7 proteins

AB Antisense oligonucleotide compns. are provided which specifically hybridize with nucleic acids encoding human and murine B7.1 and B7.2 proteins, and use of these compns. for inhibiting expression of B7 mRNA. The antisense oligonucleotides contain phosphorothioate linkages, all cytidine residues are replaced with 5'-methylcytidines, and nucleotides 1-5 and 16-20 comprise 2'-methoxyethoxy modifications. Inhibition of B7 protein expression is effective for inhibition of allergen-induced airway eosinophilia, induction of T-cell proliferation, and treatment of the mouse lung OVA model of asthma, psoriasis, allergic inflammation, rheumatoid arthritis, multiple sclerosis, and modulation of allograft rejection.

AU Trojan, J. [Reprint author]; Duc, N.; Upegui-Gonzales, L. C.; Anthony, D.; Guo, Y.; Ilan, J.

SO Gene Therapy, (1995) Vol. 2, No. SUPPL. 1, pp. S26.
Meeting Info.: Third Meeting of the European Working Group of Human Gene Transfer and Therapy. Barcelona, Spain. November 17-20, 1995.
ISSN: 0969-7128.

TI The presence of MHC-class I and B7 antigens in glioblastoma and teratocarcinoma cells expressing antisense IGF-1 RNA.

AU Shen, F. [Reprint author]; Che, X. Y.; Wu, M. C.; Xie, T. P.; Wang, X. N.; Anthony, D.; Guo, Y. J.

SO Proceedings of the American Association for Cancer Research Annual Meeting, (1996) Vol. 37, No. 0, pp. 342.
Meeting Info.: 87th Annual Meeting of the American Association for Cancer Research. Washington, D.C., USA. April 20-24, 1996.
ISSN: 0197-016X.

TI Treatment of primary liver cancer by local injection of antisense IGF-1 and B7.1 genes: A phase I/II clinical trial.

AU Liu Y; Wang H; Zhao J; Ma J; Wei L; Wu S; Xie T; Shen F; Trojan J; Habib N; Anthony D D; Wu M; Guo Y

SO Cancer gene therapy, (2000 Mar) 7 (3) 456-65.
Journal code: 9432230. ISSN: 0929-1903.

TI Enhancement of immunogenicity of tumor cells by cotransfection with genes encoding antisense insulin-like growth factor-1 and B7 .1 molecules.

AB Insulin-like growth factor-1 (IGF-1) is expressed in many tumor cell lines and has a role in both normal cell proliferation and in the growth of cancers. Tumor cells transfected with a vector encoding an IGF-1 antisense cDNA transcriptional cassette driven by the mouse metallothionein-1 promoter become immunogenic and lose their tumorigenicity in syngeneic animals. The enhanced immunogenicity is associated with an up-regulation in the expression of major histocompatibility complex class I molecule on cell surfaces. Blockade of the expression of IGF-1 in tumor cells by the IGF-1 antisense RNA approach is not uniformly effective in the induction of antitumoral protective immunity in low and nonimmunogenic tumor model systems. Here, we report that the immunogenicity of hepa 1-6 hepatoma and SMCC-1 colon carcinoma cells, which are poorly immunogenic and unresponsive to antisense IGF-1 gene transfer, can be induced by cotransfection with genes encoding antisense IGF-1 and mouse B7.1 molecules. The tumor cells modified in this manner become strongly immunogenic and can be used as a cellular vaccine to induce a protective immune response in vivo. Immunization with the transfected tumor cells also results in regression of the established hepa 1-6 hepatoma and SMCC-1 colon cancer. The immunity is tumor-specific and is mediated by CD3+ CD8+ T cells. Cytotoxic T lymphocytes generated in vitro by priming naive spleen cells and in vivo by immunizing mice with the double-transfected tumor cells

specifically lysed autologous tumors cells and were effective in adoptive immunotherapy. The data suggest that modification of tumor cells in vitro by cotransfection with genes encoding antisense IGF-1 and B7.1 molecules may open a new avenue for cancer immunogene therapy.

AU Ly A.; Duc H.T.; Kalamarides M.; Trojan L.A.; Pan Y.; Shevelev A.; Francois J.-C.; Noel T.; Kane A.; Henin D.; Anthony D.D.; Trojan J.
SO Journal of Clinical Pathology - Molecular Pathology, (2001) 54/4 (230-239).
Refs: 67
ISSN: 1366-8714 CODEN: MOPAF6
TI Human glioma cells transformed by IGF-I triple helix technology show immune and apoptotic characteristics determining cell selection for gene therapy of glioblastoma.
AB Aims - Insulin-like growth factor type I (IGF-I) antisense cellular gene therapy of tumours is based on the following data: rat glioma or hepatoma cells transfected with the vector encoding IGF-I antisense cDNA lose their tumorigenicity and induce a tumour specific immune response involving CD8(+) T cells. Recently, using the IGF-I triple helix approach in studies of tumorigenicity, major histocompatibility complex class I (MHC-I) antigens were demonstrated in rat glioma transfected cells. This study used comparative IGF-I antisense and triple helix technologies in human primary glioma cells to determine the triple helix strategy that would be most appropriate for the treatment of glioblastoma. Methods - The cells were transfected using the IGF-I triple helix expression vector, pMT-AG, derived from the pMT-EP vector, pMT-AG contains a cassette comprising a 23 bp DNA fragment transcribing a third RNA strand, which forms a triple helix structure within a target region of the human IGF-I gene. Using pMT-EP, vectors encoding MHC-I or B7 antisense cDNA were also constructed. Results - IGF-I triple helix transfected glioma cells are characterised by immune and apoptotic phenomena that appear to be related. The expression of MHC-I and B7 in transfected cells (analysed by flow cytometry) was accompanied by programmed cell death (detected by dUTP fluorescein terminal transferase labelling of nicked DNA and electron microscopic techniques). Cotransfection of these cells with MHC-I and B7 antisense vectors suppressed the expression of MHC-I and B7, and was associated with a pronounced decrease in apoptosis. Conclusion - When designing an IGF-I triple helix strategy for the treatment of human glioblastoma, the transfected tumour cells should have the following characteristics: the absence of IGF-I, the presence of both MHC-I and B7 molecules, and signs of apoptosis.

AU Kanwar J.R.; Shen W.-P.; Kanwar R.K.; Berg R.W.; Krissansen G.W.
SO Journal of the National Cancer Institute, (17 Oct 2001) 93/20 (1541-1552).
Refs: 55
ISSN: 0027-8874 CODEN: JNCIAM
TI Effects of survivin antagonists on growth of established tumors and B7-1 immunogene therapy.
AB Background: Survivin, a member of the inhibitor of apoptosis (IAP) protein family, is detectable in most types of cancer, and its presence is associated with a poor prognosis. We determined the effects of gene-based therapies that inhibit survivin function in a mouse tumor model. Methods: Using five to six mice per treatment group, we injected tumors derived from mouse EL-4 thymic lymphoma cells with plasmids encoding antisense survivin, a dominant-negative mutant survivin, and the T-cell costimulator B7-1. Expression of endogenous survivin and the proteins encoded by the injected plasmids were examined by immunohistochemical staining of tumor sections and by western blot and flow cytometry analyses of isolated tumor cells. Tumor growth, the generation of antitumor cytotoxic T-lymphocyte (CTL) activity, apoptosis, and the contribution of leukocyte subsets to antitumor activity were measured. All statistical tests were two-sided. Results: Large (1.0-cm diameter) tumors had approximately 10-fold more survivin than small (0.2-cm diameter) tumors. At 28 days after injection, antisense and dominant-negative mutant survivin plasmids statistically significantly inhibited the growth of both small ($P = .006$ and $P = .0018$, respectively) and large ($P < .001$ for both plasmids) EL-4 tumors compared with tumors injected with empty plasmid. The growth of large tumors was further

inhibited by intratumoral injection with antisense survivin and B7-1 (P = .004); thus, inhibition of survivin expression renders large tumors susceptible to B7-1-mediated immunotherapy. Mice whose tumors were completely eradicated by injection of B7-1 remained tumor free for 26 days after re-injection with EL-4 cells (when the experiment ended). Compared with tumors injected with empty plasmid, tumors injected with survivin-based plasmids had increased apoptosis, and animals bearing such tumors generated more antitumor CTLs. Conclusion: Intratumoral injection of plasmids that block survivin expression and stimulate the generation of tumor-specific CTLs may be beneficial for the treatment of large lymphomas.